

12-3 Skills Practice**Probability**

Ahmed is posting 2 photographs on his website. He has narrowed his choices to 4 landscape photographs and 3 portraits. If he chooses the two photographs at random, find the probability of each selection.

1. $P(2 \text{ portrait})$ 2. $P(2 \text{ landscape})$ 3. $P(1 \text{ of each})$

The Carubas have a collection of 28 video movies, including 12 westerns and 16 science fiction. Elise selects 3 of the movies at random to bring to a sleep-over at her friend's house. Find the probability of each selection.

4. $P(3 \text{ westerns})$ 5. $P(3 \text{ science fiction})$
 6. $P(1 \text{ western and } 2 \text{ science fiction})$ 7. $P(2 \text{ westerns and } 1 \text{ science fiction})$
 8. $P(3 \text{ comedy})$ 9. $P(2 \text{ science fiction and } 2 \text{ westerns})$

For Exercises 10–13, use the chart that shows the class and gender statistics for the students taking an Algebra 1 or Algebra 2 class at La Mesa High School.

If a student taking Algebra 1 or Algebra 2 is selected at random, find each probability. Express as decimals rounded to the nearest thousandth.

Class/Gender	Number
Freshman/Male	95
Freshman/Female	101
Sophomore/Male	154
Sophomore/Female	145
Junior/Male	100
Junior/Female	102

10. $P(\text{sophomore/female})$
 11. $P(\text{junior/male})$
 12. $P(\text{freshman/male})$
 13. $P(\text{freshman/female})$

Find the odds of an event occurring, given the probability of the event.

14. $\frac{5}{8}$ 15. $\frac{2}{7}$ 16. $\frac{3}{5}$
 17. $\frac{1}{10}$ 18. $\frac{5}{6}$ 19. $\frac{5}{12}$

Find the probability of an event occurring, given the odds of the event.

20. 2:1 21. 8:9 22. 4:1
 23. 1:9 24. 2:7 25. 5:9

12-3**Practice****Probability**

A bag contains 1 green, 4 red, and 5 yellow balls. Two balls are selected at random. Find the probability of each selection.

1. $P(2 \text{ red})$
2. $P(1 \text{ red and } 1 \text{ yellow})$
3. $P(1 \text{ green and } 1 \text{ yellow})$
4. $P(2 \text{ green})$
5. $P(2 \text{ red and } 1 \text{ yellow})$
6. $P(1 \text{ red and } 1 \text{ green})$

A bank contains 3 pennies, 8 nickels, 4 dimes, and 10 quarters. Two coins are selected at random. Find the probability of each selection.

7. $P(2 \text{ pennies})$
8. $P(2 \text{ dimes})$
9. $P(1 \text{ nickel and } 1 \text{ dime})$
10. $P(1 \text{ quarter and } 1 \text{ penny})$
11. $P(1 \text{ quarter and } 1 \text{ nickel})$
12. $P(2 \text{ dimes and } 1 \text{ quarter})$

Henrico visits a home decorating store to choose wallpapers for his new house. The store has 28 books of wallpaper samples, including 10 books of WallPride samples and 18 books of Deluxe Wall Coverings samples. The store will allow Henrico to bring 4 books home for a few days so he can decide which wallpapers he wants to buy. If Henrico randomly chooses 4 books to bring home, find the probability of each selection.

13. $P(4 \text{ WallPride})$
14. $P(2 \text{ WallPride and } 2 \text{ Deluxe})$
15. $P(1 \text{ WallPride and } 3 \text{ Deluxe})$
16. $P(3 \text{ WallPride and } 1 \text{ Deluxe})$

For Exercises 17–20, use the table that shows the range of verbal SAT scores for freshmen at a small liberal arts college.

Range	400–449	450–499	500–549	550–559	600–649	650+
Number of Students	129	275	438	602	620	412

If a freshman student is chosen at random, find each probability. Express as decimals rounded to the nearest thousandth.

17. $P(400–449)$
18. $P(550–559)$
19. $P(\text{at least } 650)$

Find the odds of an event occurring, given the probability of the event.

20. $\frac{4}{11}$
21. $\frac{12}{13}$
22. $\frac{5}{99}$
23. $\frac{1}{1000}$
24. $\frac{5}{16}$
25. $\frac{3}{95}$
26. $\frac{9}{70}$
27. $\frac{8}{15}$

Find the probability of an event occurring, given the odds of the event.

28. 2:23
29. 2:5
30. 15:1
31. 9:7
32. 11:14
33. 1000:1
34. 12:17
35. 8:13